

The opinion in support of the decision being entered today was ***not*** written for publication and is ***not*** binding precedent of the Board.

Paper No. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* ALLEN I. FEINSTEIN,  
RUTH ANN DOYLE and CALVIN T. CHEW

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Appeal No. 2000-0674  
Application 08/867,511

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ON BRIEF

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Before WARREN, KRATZ and TIMM, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

*Decision on Appeal and Opinion*

We have carefully considered the record in this appeal under 35 U.S.C. § 134, including the opposing views of the examiner, in the answer, and appellants, in the brief, and reply brief, and based on our review, find that we cannot sustain the rejections of appealed claims 2, 4 through 7, 19 through 30 and 39 through 41,<sup>1</sup> all of the claims in the application, under 35 U.S.C. § 103 as being unpatentable over LaPierre et al. (LaPierre) taken in view of Reichmann,<sup>2</sup>

In order to establish a *prima facie* case of obviousness, the examiner must show that some objective teaching, suggestion or motivation in the applied prior art taken as a whole and/or knowledge generally available to one of ordinary skill in this art would have led that person to

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<sup>1</sup> See specification, pages 19-24, and the amendments of March 8, 1999 (Paper No. 9).

the claimed invention as a whole, including each and every limitation of the claims, without recourse to the teachings in appellants' disclosure. *See generally, In re Rouffet*, 149 F.3d 1350, 1358, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998); *Pro-Mold and Tool Co. v. Great Lakes Plastics Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1629-30 (Fed. Cir. 1996); *In re Fine*, 837 F.2d 1071, 1074-76, 5 USPQ2d 1596, 1598-1600 (Fed. Cir. 1988); *In re Dow Chem. Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531-32 (Fed. Cir. 1988). The requirement for objective factual underpinnings for a rejection under § 103(a) extends to the determination of whether the references can be combined. *See In re Lee*, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433-34 (Fed. Cir. 2002), and cases cited therein.

On this record, we must agree with appellants that the examiner has not made out a *prima facie* case of obviousness with respect to the claimed invention. The examiner submits that one of ordinary skill in this art would have combined LaPierre with Reichmann and found therein the motivation to include in the process of LaPierre "a hydrogenation catalyst prior to the isomerization catalyst because Reichmann has taught that use of a hydrogenation catalyst in a continuous xylene isomerization process reduces xylene loss" (answer, page 4). For the reasons given by appellants in the brief and reply brief and the following, we cannot agree.

As pointed out by appellants, the catalyst system used by LaPierre makes use of two different zeolite catalysts, each of which must contain "an amount of a noble metal effective to increase the hydrogenative activity of the zeolite" (page 3, 21-27; see also page 4, lines 37-43). Indeed, LaPierre is interested in addressing the problem presented by ethylbenzene as well as paraffins in the loop manufacture of xylene (e.g., page 2, lines 40-57). We note that there is no mention by LaPierre of a problem with olefins in the process stream.

As further pointed out by appellants, the two catalyst system of Reichmann uses a hydrogenation catalyst to contend with the problem created by the formation of olefins by the isomerization catalyst in the loop manufacture of xylenes, and in this respect teaches that the position of the hydrogenation catalyst in the loop is after the isomerization catalyst even though the process is illustrated with the hydrogenation catalyst in front of the isomerization catalyst in order to treat the olefins present in the recycle stream for the isomerization catalyst (cols. 3-4).

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<sup>2</sup> Answer, pages 3-4.

The problem addressed by Reichmann is the presence of the olefins in the recycle stream resulting from the use of isomerization catalysts without a hydrogenation function, such catalysts are used to avoid the hydrogenation of aromatics which would reduce the amount of p-xylene produced (col. 2). Indeed, Reichmann states that

[n]ow it has been found for xylene isomerization using a catalyst unable to substantially reduce the lower molecular weight olefins produced during isomerization, that use of a hydrogenation catalyst in the process to convert such olefins can substantially reduce the xylene loss leading to a greater overall p-xylene yield, and can also lead to lessen catalyst coking and longer catalyst lifetime. [Col. 3, ll. 5-12.]

Therefore, on this record, we must conclude that one of ordinary skill in this art would not have combined LaPierre with Reichmann because LaPierre employs catalysts with a hydrogenation function and does not teach that the process using such catalysts produces olefins, and thus would not have the problem that Reichmann addresses. It is well settled that the examiner must point to some teaching, suggestion or motivation in the prior art to support the combination of references. *See Lee, supra*; *Smith Industries medical Systems, Inc. v. Vital Signs, Inc.*, 183 F.3d 1347, 1356, 51 USPQ2d 1415, 1420-21 (Fed. Cir. 1999); *In re Mayne*, 1043 F.3d 1339, 1342, 41 USPQ2d 1451, 1454 (Fed. Cir. 1997); *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577, 221 USPQ 9292, 933 (Fed. Cir. 1984); *In re Keller*, 642 F.2d 413, 425-26, 208 USPQ 871, 881-82 (CCPA 1981); *see also Dow Chem.*, 837 F.2d at 473, 5 USPQ2d at 1531 (“The consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that [the claimed process] should be carried out and would have a reasonable likelihood of success, viewed in light of the prior art. [Citations omitted] Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant’s disclosure.”).

The examiner's decision is reversed.

*Reversed*

CHARLES F. WARREN  
Administrative Patent Judge

PETER F. KRATZ  
Administrative Patent Judge

CATHERINE TIMM  
Administrative Patent Judge

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